STREP A ISOLATION AGAR

INTENDED USE
Remel Strep A Isolation Agar is a solid medium recommended for use in qualitative procedures for the primary isolation of beta-hemolytic group A streptococci from throat cultures and upper respiratory specimens.

SUMMARY AND EXPLANATION
Pharyngitis caused by group A beta-hemolytic streptococci (*Streptococcus pyogenes*) can lead to serious medical complications, such as rheumatic fever and glomerulonephritis.[1] Throat culture is the primary means by which infection with *S. pyogenes* is identified. Several investigators have demonstrated improved isolation rates using sheep blood agar incorporated with selective agents to inhibit the commensal microbial flora commonly encountered in the oropharynx.[2,3] In 1977, Gunn et al. developed a selective medium consisting of sheep blood agar supplemented with sulfamethoxazole and trimethoprim for isolating groups A and B streptococci.[4] Using a modification of Gunn's formula, Welch et al. demonstrated superior recovery of *S. pyogenes* when compared with isolation rates found with nonselective sheep blood agar.[5,6]

PRINCIPLE
Casein and soy peptones provide a nutritious source of organic nitrogen, amino acids, and peptides which are necessary for bacterial growth. Sodium chloride supplies essential electrolytes and maintains osmotic equilibrium. Sheep blood supplies nutrients necessary to support the growth of streptococci and allows detection of hemolytic reactions. A unique combination of selective ingredients is added to the medium to suppress commensal microbial flora and provide enhanced recovery of *S. pyogenes*.

REAGENTS (CLASSICAL FORMULA)*

Casein Peptone	15.0	g	Selective Agents	40.2	mg
Soy Peptone	5.0	g	Sheep Blood	5	%
Sodium Chloride	5.0	g	Agar	15.0	g
			Demineralized Water	1000.0	ml

pH 7.3 ± 0.2 @ 25°C

*Adjusted as required to meet performance standards.

PROCEDURE
1. Inoculate and streak the specimen as soon as possible after it is received in the laboratory. Selective and nonselective media should be inoculated to ensure recovery of microorganisms that may be inhibited on selective agar.
2. Inoculate Strep A Isolation Agar by rolling the swab over a small area of the agar surface. Use a sterile inoculating loop to streak the plate for isolation. Stab the agar several times with the loop in the area of heaviest inoculation. Anaerobiosis below the surface of the agar permits maximum expression of beta hemolysis by subsurface colonies.
3. Incubate plate in 5-10% CO_2 at 33-37°C for 24-48 hours.
4. Examine plate for typical colony morphology and beta hemolysis. On Strep A Isolation Agar, colonies of *S. pyogenes* are translucent or opaque, white to gray, and surrounded by a zone of beta hemolysis.

QUALITY CONTROL
All lot numbers of Strep A Isolation Agar have been tested using the following quality control organisms and have been found to be acceptable. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, patient results should not be reported.

CONTROL	INCUBATION	RESULTS
Streptococcus pyogenes ATCC® 19615	CO_2, 18-24 h @ 33-37°C	Growth, beta hemolysis
Escherichia coli ATCC® 25922	CO_2, 18-24 h @ 33-37°C	Inhibition (partial to complete)
Neisseria sicca ATCC® 9913	CO_2, 18-24 h @ 33-37°C	Inhibition (partial to complete)
Staphylococcus epidermidis ATCC® 12228	CO_2, 18-24 h @ 33-37°C	Inhibition (partial to complete)
Streptococcus pneumoniae ATCC® 6305	CO_2, 18-24 h @ 33-37°C	Inhibition (partial to complete)
Streptococcus sanguinis ATCC® 10556	CO_2, 18-24 h @ 33-37°C	Inhibition (partial to complete)

PERFORMANCE CHARACTERISTICS
In a study of 600 throat swabs from patients suffering acute pharyngitis cultured on Strep A Isolation Agar and a standard, nonselective Blood Agar, the overall detection rates for all isolates of group A streptococci were 91% on Strep A Isolation Agar and 67% on nonselective Blood Agar. When both selective and nonselective agars were used in combination, the overall detection rates of group A streptococci increased to 93%.[5]

LIMITATIONS
1. Colonies from selective media may not react with serogrouping reagents on direct testing. A subculture to a nonselective medium prior to serogrouping may be necessary.[6]
2. Organisms other than *S. pyogenes* (*Neisseria* spp., staphylococci, gram-negative bacilli) may grow on this medium but are generally inhibited. Additional biochemical and serological testing may be required for definitive identification. Consult appropriate references for further instructions.[1]

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BIBLIOGRAPHY

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Refer to the front of Remel *Technical Manual of Microbiological Media* for **General Information** regarding precautions, product storage and deterioration, specimen collection, storage and transportation, materials required, quality control, and limitations.

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